



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/776,339

02/12/2004

Yasuo Shimomura

1417-452

1772

22850

7590

08/02/2006

C. IRVIN MCCLELLAND

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.

1940 DUKE STREET

ALEXANDRIA, VA 22314

EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1755

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/776,339

Applicant(s)

SHIMOMURA ET AL.

Examiner

C. Melissa Koslow

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-22 is/are rejected.
- 7) ☒ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/7/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1755

This action is in response to applicants' amendment of 7 July 2006. the amendment to the specification is noted and is acceptable. The amendments to the claimed have overcome the objection to the claims, the 35 USC 112 rejection and the art rejections over JP 7-291799 and U.S. patents 3,468,801 and 4,093,890. Applicant's arguments with respect to the remaining art rejections have been fully considered but they are not persuasive.

Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim.

The subject matter of this claim is now present in claim 1. Thus claim 12 does not further limit claim 1.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-9, 12, 13, 15-20 and 22 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. patent application publication 2005/0093442.

This reference teaches a light emitting device comprising a semiconductor light emitting element and a wavelength conversion material comprising at least two phosphors where one of them has the formula $\text{Ca}_3\text{Sc}_2\text{Si}_3\text{O}_{12}:0.03 \text{ mol Ce}$ or $\text{CaMg}_2\text{Lu}_2\text{Si}_2\text{GeO}_{12}:0.06 \text{ mol Ce}$. This device clearly reads upon that of claim 18 and the phosphor falls within the formula of claims 13 and 15. Therefore the taught device must inherently have a R_a and R_s that falls within that claimed and the phosphor must inherently have a brightness and a sum of color coordinates x and y that fall within the ranges of claims 16 and 17, absent any showing to the contrary. The reference

Art Unit: 1755

clearly teaches using the taught device as a lamp or as part of a lighting system. The reference clearly teaches the claimed phosphor, device and system.

Claims 1-9 and 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent application publication 2005/0093442.

As stated above, this reference teaches the claims light emitting device. Paragraph [0003] teaches such devices are conventionally used in displays as a light. Accordingly, one of ordinary skill in the art would have found it obvious to use the taught device in a display as a light source.

This reference also teaches the phosphor in the taught device can have the formula $(\text{Re}_{1-x}\text{Sc}_x)_2\text{A}_{3-p}\text{B}_p\text{Si}_{z-q}\text{Ge}_q\text{O}_{12+d}:2y\text{Ce}$, where Re is Y or a lanthanide other cerium, A is Mg, Ca, Sr or Ba, B is Mg or Zn, p is 0-3, q is 0-3, z is 2.5-3.5, $0 \leq x < 1$, $0 < y \leq 0.3$ and $-1.5 \leq d \leq 1.5$. The taught values overlap the claimed values and the taught elemental composition suggests the claimed elemental composition. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). Thus the reference suggests phosphors having the formula $(\text{Lu}_{1-x}\text{Sc}_x)_2\text{Ca}_{3-p}\text{Mg}_p\text{Si}_{z-q}\text{Ge}_q\text{O}_{12+d}:2y\text{Ce}$, p is 0-3, q is 0-3, z is 2.5-3.5, $0 \leq x < 1$, $0 < y \leq 0.3$ and $-1.5 \leq d \leq 1.5$. The taught values overlap the claimed values. One of ordinary skill in the art would have found it obvious to use the suggested phosphor in the taught uses of a light source in a display or a lighting system.

This reference also teaches the phosphor in the taught device can have the formula $(\text{Ca}_{1-x-y}\text{Sr}_x\text{Ba}_y)_3(\text{Sc}_{1-a-c}\text{Lu}_a\text{D}_c)_2\text{Si}_{n-w}\text{Ge}_w\text{O}_{12+d}:3z\text{Ce}$, where D is Mg or Zn, a is 0-1, c is 0-1, n is 2.5-3.5, w is 0-3, y is 0-1, $0 \leq x < 1$, $0 < z \leq 0.3$ and $-1.5 \leq d \leq 1.5$. {It is clear that the subscript b in 1-a-

Art Unit: 1755

b is a typographical error and that it should be c} The taught values overlap the claimed values and the taught elemental composition suggests the claimed elemental composition. Thus the reference suggests phosphors having the formula $(\text{Ca}_{1-x-y}\text{Sr}_x\text{Ba}_y)_3(\text{Sc}_{1-a}\text{Lu}_a)_2\text{Si}_{n-w}\text{Ge}_w\text{O}_{12+d}:3z\text{Ce}$, where a is 0-1, n is 2.5-3.5, w is 0-3, y is 0-1, $0 \leq x < 1$, $0 < z \leq 0.3$ and $-1.5 \leq d \leq 1.5$. The taught values overlap the claimed values. One of ordinary skill in the art would have found it obvious to use the suggested phosphor in the taught uses of a light source in a display or a lighting system. The reference suggests the claimed phosphor, device, display and lighting system.

Applicants argue the reference does not teach a phosphor having the claimed formula. This argument is not convincing. Applicants are referred to paragraphs [0012], [0014], [0017], [0018], [0027]-[0029], [0048]-[0049], [0052]-[0054], [0062], [0063] and [0109]-[0112] and claims 15, 23, 24, 39-46 and 49-62. All of these paragraphs and claims teach and suggest the claimed phosphors as discussed above. Applicants did not claim priority to the Japanese application filed on 28 August 2001 nor could they since the Japanese application was filed more than a year before this application. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter. Thus this argument is not convincing. The rejections are maintained. Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion in the cited art of record of codoping the taught and suggested cerium doped phosphors with at least one dopant selected from Cr, Mn, Fe, Co, Ni,

Art Unit: 1755

Cu, Pr, Nd, Sm, Eu, Tb, Dy, Ho, Er, Tm and Yb. In addition, there is no teaching or suggestion in the cited art of record of a phosphor having the claimed formula and doped with Ce and at least one dopant selected from Cr, Mn, Fe, Co, Ni, Cu, Pr, Nd, Sm, Eu, Tb, Dy, Ho, Er, Tm and Yb.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

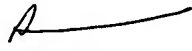
The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1755

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
July 28, 2006


C. Melissa Koslow
Primary Examiner
Tech. Center 1700